WHAT IS CLAIMED IS:

1. A semiconductor device, comprising:

a semiconductor substrate that includes an active element region, an integrated circuit having an active element in the active element region, and an electrode electrically connected to the integrated circuit;

a resin layer that is formed on a surface of the semiconductor substrate where the electrode is also formed, so as to avoid the electrode;

a wiring layer that extends from the electrode and across a top of the resin layer, and includes a plurality of electrically connecting portions, the plurality of electrically connecting portions including a first electrically connecting portion and a second electrically connecting portion, a surface area of the first electrically connecting portion being larger than a surface area of the second electrically connecting portion; and

an external terminal that is provided on the electrically connecting portions.

2. The semiconductor device according to claim 1, the second electrically connecting portion being formed on the top surface of the resin layer.

3. The semiconductor device according to claim 1, the resin layer overlapping the active element region of the semiconductor substrate; and

the first electrically connecting portion being formed on the area of the resin layer that overlaps the active element region.

4. The semiconductor device according to claim 1, the first electrically connecting portion being formed so as to cover nearly the entire top surface of the resin layer.

5. The semiconductor device according to claim 4, the first electrically connecting portion being formed so as to further cover a side surface of the resin layer.

6. The semiconductor device according to claim 5, the first electrically connecting portion being formed so as to extend to the region of the substrate beyond the resin layer.

7. The semiconductor device according to claim 1, the first electrically connecting portion supplying at least one of a ground potential and a power-source potential.

8. The semiconductor device according to claim 7, the first electrically connecting portion being formed in at least one of a shape and a size that provides predetermined electrical characteristics.

9. The semiconductor device according to claim 1, further comprising an insulating layer formed so as to cover the wiring layer while avoiding the external terminal.

10. The semiconductor device according to claim 1, the semiconductor substrate being at least one of a semiconductor chip and a semiconductor wafer.

11. A semiconductor device, comprising:

a semiconductor substrate that includes an active element region, an integrated circuit having an active element in the active element region, and an electrode electrically connected to the integrated circuit;

a resin layer that is formed on a surface of the semiconductor substrate where the electrode is also formed, so as to avoid the electrode;

a wiring layer that extends from the electrode and across a top of the resin layer, and includes a plurality of electrically connecting portions, the wiring layer including a first electrically connecting portion and a second electrically connecting portion, the first electrically connecting portion covering the entire surface of the resin layer except for the area occupied by the wiring layer including the second electrically connecting portion and the area surrounding the wiring layer including the second electrically connecting portion; and

an external terminal that is provided on the electrically connecting portions.

12. A circuit board, comprising:

the semiconductor device according to claim 1.

13. An electronic device, comprising:

the semiconductor device according to claim 1.

14. A method of manufacturing a semiconductor device, comprising:

(a) forming a resin layer on a surface of a semiconductor substrate, the semiconductor substrate including an active element region, an integrated circuit having an active element in the active element region, and an electrode electrically connected to the integrated circuit, the resin layer being formed so as to avoid the electrode;

(b) extending a wiring layer from the electrode across a top of the resin layer, making the wiring layer include a plurality of electrically connecting portions;

(c) providing an external terminal on the electrically connecting portions; and

(d) forming the plurality of electrically connecting portions in step (b) so that a surface area of a first electrically connecting portion is larger than a surface area of a second electrically connecting portion.